

San Juan County, New Mexico Early Action Compact for Ozone Clean Air Action Plan

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List of Acronyms

CAA	Clean Air Act
CAAP	Clean Air Action Plan
EAC	Early Action Compact
EPA	United States Environmental Protection Agency
NAAQS	National Ambient Air Quality Standards
NMED	New Mexico Environment Department
NO _x	Nitrogen Oxides
ppm	parts per million
PSA	Public Service Announcement
SIP	State Implementation Plan
VOC	Volatile Organic Compounds

1. Introduction

In December 2002, the New Mexico Environment Department (NMED), the United States Environmental Protection Agency (EPA), the Cities of Aztec, Bloomfield and Farmington, and San Juan County entered into a voluntary agreement to research and analyze air quality in northwestern New Mexico with respect to the 8-hour standard for ground-level ozone. The agreement, known as the San Juan County Early Action Compact for ozone (EAC), set forth a schedule for the development of technical information about the formation of ozone and the adoption and implementation of any necessary emissions control measures. The goal of the EAC is to ensure San Juan County's continued compliance with the 8-hour ozone standard through December 31, 2007.

This document, the San Juan County Clean Air Action Plan (CAAP), is an important deliverable under the EAC. The CAAP synthesizes results of extensive ozone modeling into a discussion of measures to help San Juan County maintain attainment of the 8-hour ozone standard, while raising public awareness of the issue. The following sections describe the ground level ozone pollution situation in San Juan County, the EAC and its results, and components of the CAAP that will be implemented in San Juan County.

2. Ozone in San Juan County

2.1 National Ozone Standards

The Federal Clean Air Act (CAA) is the comprehensive law that regulates airborne emissions from area, mobile, and stationary sources nationwide. This law authorizes the EPA to establish National Ambient Air Quality Standards (NAAQS) for several pollutants in order to protect public health and the environment. The EPA currently has two NAAQS for ozone: the 1-hour peak standard of 0.12 parts per million (ppm) and the 8-hour standard of 0.08 ppm.

2.2 Ozone Monitoring in San Juan County

The New Mexico Environment Department operates two continuous ozone monitors in San Juan County. The “Substation” ozone monitor is located west of Farmington and the “Bloomfield” monitor is located just north of Bloomfield. Ozone monitoring data is collected by NMED, submitted to EPA, and used to determine the status of air quality in the northwestern corner of New Mexico with respect to the ozone NAAQS.

2.3 The 1-Hour Ozone Standard in Northwestern New Mexico

To meet this standard, an area must have a monitored hourly peak ozone concentration at or below 0.12 ppm. If an area exceeds the standard more than three times in three years, it is subject to a nonattainment designation. San Juan County has never exceeded the 1-hour ozone standard.

2.4 The 8-Hour Ozone Standard in Northwestern New Mexico

During the past several years, 8-hour average ozone concentrations in San Juan County have approached the 8-hour ozone NAAQS of 0.08 ppm. The status of an area with respect to the 8-hour standard is determined by averaging the fourth highest 8-hour average ozone concentrations from each of the most recent three years. This number, called the design value, must be equal to or less than the standard concentration for an area to meet the standard. The Substation monitor’s current design value (averaging from the years 2001, 2002, and 2003) is 0.0747 ppm and the Bloomfield monitor’s current design value is 0.0743 ppm. San Juan County has never exceeded the 8-hour ozone standard. Although San Juan County has always been and is currently in attainment of the 8-hour ozone standard, signatories to the San Juan County EAC will strive to continue to meet the terms of the EAC, which is described in detail in 3.2. Failure to meet the obligations of the EAC will result in immediate reversion to the traditional process of nonattainment designation, if the area’s design value is violating the 8-hour NAAQS.

2.5 Nonattainment Areas

Areas formally declared in violation of the NAAQS and areas contributing to a violation are designated “nonattainment areas.” Nonattainment areas must meet certain Clean Air Act requirements, such as:

- **Transportation Conformity** - Requires a demonstration that regional long-range transportation plans will not negatively impact air quality, or federal transportation funds can be withheld.
- **New Source Review** - Requires a review of new or modified industrial operations to minimize air pollution.
- **Rate of Progress Requirements** - A certain percentage of pollutants must be reduced each year.
- **Specific attainment date** - Consequences of failure to reach attainment by the specified date include stricter control measures and the potential for stiff penalties.
- **10-year maintenance plan** - Includes additional or continuing mandatory programs for 10 years following redesignation to attainment.

Another requirement obligates the state to develop and implement a prescriptive, enforceable clean air plan that mandates how the area will come into compliance with the NAAQS that is exceeded. The enforceable clean air plan and revisions to it are known as the State Implementation Plan (SIP).

3. San Juan County Early Action Compact for Ozone

3.1 Early Action Compact Protocol

EPA developed the Protocol for Early Action Compacts (EAC Protocol) during 2002. In exchange for relief from certain provisions of the nonattainment area requirements, the protocol establishes a two-step process that offers a more expeditious time line for achieving the 8-hour ozone standard than expected under EPA's 8-hour ozone standard implementation rulemaking. In the case of San Juan County, the 8-hour ozone NAAQS is achieved, so following the EAC Protocol allowed the signatories to complete a technical modeling analysis that gives EAC signatories and local stakeholders a more comprehensive understanding of the issue and aims to keep the area within the standard. The principles of the EAC Protocol to be executed by local, state and EPA officials include the following:

- Early planning, implementation, and emission reductions leading to expeditious attainment and maintenance of the 8-hour ozone standard;
- Local area control of any measures to be employed, with broad-based public input;
- State support to ensure technical integrity of the Clean Air Action Plan;
- If necessary, formal incorporation of the Clean Air Action Plan into the State Implementation Plan (SIP);
- Deferral of the effective date of nonattainment designation and related requirements, if applicable, as long as all terms and milestones are met; and
- Safeguards to return areas to traditional nonattainment SIP requirements should terms and/or milestones go unfulfilled, with appropriate credit given for emission reduction measures already implemented.

When EPA's 8-hour implementation guidelines call for designations, EPA will defer the effective date of any nonattainment designation and related requirements for participating areas that fail to meet the 8-hour ozone standard as long as all terms and milestones of the EAC are being met. If the nonattainment designation is deferred, EPA will move expeditiously to designate the area as attainment and impose no additional requirements, provided that the monitors in the area reflect attainment by December 31, 2007.

If at any time the area does not meet all terms of the EAC, including agreed-upon milestones, then the area will forfeit participation and attainment or nonattainment designation (or redesignation if necessary) will become effective. The EPA will offer such an area no delays, exemptions or other favorable treatment because of the area's previous participation in this program.

If an area violates the 8-hour ozone standard as of December 31, 2007, and an area has had the effective date of any nonattainment designation deferred, such nonattainment designation will become effective. The State must then submit a revised attainment demonstration SIP revision according to the Clean Air Act and EPA's 8-hour implementation rule, unless the 8-hour implementation schedule requires SIPs from 8-

hour nonattainment areas before December 31, 2008. In that event, a revised attainment demonstration SIP revision for the participating area will be due as soon as possible but no later than December 31, 2008. Under no circumstances will EPA extend the attainment date for the area beyond that required by the CAA and/or EPA's 8-hour implementation rule. The region will not be allowed to renew this EAC after December 31, 2007 or to initiate a new EAC if it has previously forfeited its participation.

3.2 San Juan County Early Action Compact

In December 2002 the state and local governments of San Juan County entered into a Memorandum of Agreement with EPA Region 6 consistent with terms specified in the EPA's EAC Protocol. Signatories to the agreement include:

- The New Mexico Environment Department
- The City of Aztec
- The City of Farmington
- The City of Bloomfield
- San Juan County
- U.S. Environmental Protection Agency, Region 6

The geographic area include in the EAC is all of San Juan County, excluding the Navajo Nation and Ute Mountain Reservation.

The EAC photochemical modeling focused on four distinct elevated ozone episodes during the summer of 2002 within a longer 50-day ozone period:

- June 4-8, 2002
- June 16-19, 2002
- June 30-July 2, 2002
- July 16-18, 2002.

The EAC established several planning milestones that must be met for the EAC to remain in effect. The milestones are as follows:

- June 16, 2003 – Potential state, local and other emission reduction strategies identified and described (*milestone met*);
- March 31, 2004 – NMED must propose a Clean Air Action Plan
- May 31, 2004 – NMED must finalize a Clean Air Action Plan
- December 31, 2004 – If necessary, NMED must complete any required public rulemaking hearings, adopt the Clean Air Action Plan as part of the New Mexico SIP, and submit the SIP revision to EPA for approval
- September 30, 2005 – EPA must take final action on the SIP submittal
- December 31, 2005 – Any mandatory emission reduction strategies are to be implemented no later than this date
- December 31, 2007 – Demonstrated attainment of the 8-hour ozone standard.

The EAC also establishes several other requirements that must be included in the early action SIP and planning process:

3.2.1 Reporting

The NMED assesses and reports progress towards milestones in a regular, public process, at least every six months, beginning in June 2003 and concluding in December 2007.

3.2.2 Emissions Inventories

The National Emission Inventory maintained by EPA was used to determine point and mobile source emissions for San Juan County. The New Mexico Oil and Gas Association contributed estimates of additional emissions from oil and gas exploration and production activities that fall below air permitting thresholds. Future year inventories sufficiently account for projected future growth in ozone precursor emissions through 2007, particularly from stationary, area, and mobile sources. Emissions inventories were compared and analyzed for trends in emission sources over time. All adopted federal and state emission reduction strategies that have been or will be implemented by the December 31, 2007 attainment date are included in all emission inventories.

3.2.3 Photochemical Modeling

Base and future case photochemical modeling is required and was performed with technical assistance from a modeling contractor. All modeling is SIP quality and performed within EPA's accepted margin of accuracy and based on EPA's guidance. The modeling is carefully documented in a series of reports, sufficiently accounts for projected future growth in ozone precursor emissions, was concurrently reviewed by EPA and a variety of technical and non-technical stakeholders, and was used to determine the effects of changes and additions to the emissions inventory for future years.

3.2.4 Maintenance for Growth and Future Growth Scenarios

The modeling includes a component to address emissions growth at least 5 years beyond December 31, 2007, making a best effort to ensure that the area will remain in attainment of the 8-hour standard during that period. This was accomplished with a modeling run for the year 2012. Additional future modeling runs for 2007 focused on a variety of growth scenarios dependent on changes and additions to the components of the emissions inventory. These included modeling runs that incorporated the following: ozone source apportionment runs, the addition of two new coal-fired power plants to the area, condensing year 2012 oil and gas exploration and production to occur prior to 2007, increased mobile source emissions, doubled area source emissions, and doubled biogenic emissions.

3.2.5 Public Involvement

Public involvement was vital to all stages of technical work per the EAC. Periodic meetings with local EAC signatory parties were held by NMED. Several meetings with the Four Corners Ozone Task Force and the public were held during the course of the technical modeling analysis per the requirements of the EAC. Technical decision-making and modeling was performed with involvement of a Technical Peer Review Committee, which was responsible for review and critique of work plans and products. The Technical Peer Review Committee held several conference calls and one meeting. NMED solicited and received input from stakeholders continually throughout the analysis through telephone and email contacts. Information about the EAC and inventory and modeling reports are available to the public on the Four Corners Ozone Task Force webpage (<http://www.nmenv.state.nm.us/ozonetf/>). Additionally, the project has been well publicized in the local press. Articles and opinion pieces about air quality and ozone, as well as advertisements and press releases for meetings, appeared in local newspapers. Local radio and television broadcasts focused on air quality and ozone.

3.3 San Juan County Early Action Compact Results

The results of the EAC modeling indicates that San Juan County is expected to remain in attainment of the 8-hour ozone standard through 2007 by a substantial margin. Concentrations of ozone are predicted to remain nearly the same during the next three years. Modeling predicted the Substation monitor's 2007 design value to be 0.07437 ppm and the Bloomfield monitor's 2007 design value to be 0.07249 ppm.

The modeled impact of adding two new power plants in the Four Corners region is projected to have minimal impact on 8-hour ozone concentrations. If the estimated year 2012 development of the San Juan Basin oil and gas field is accelerated to actually occur three years from now (i.e., by 2007) the modeled impact on 8-hour ozone concentrations is expected to be insignificant. Impacts on 8-hour ozone concentrations were also insignificant when on-road motor vehicle emissions rates were increased to reflect an older vehicle fleet, and when the area source emissions inventory was doubled. In addition, the impact of year 2012 emissions on 8-hour ozone concentrations was also modeled to be minimal.

The impact on 8-hour ozone concentrations was greatest when biogenic VOC and NO_x were doubled, indicating that an exceedence of the 8-hour ozone NAAQS in San Juan County in the future will require a significant increase in VOC emissions and/or heightened VOC reactivity.

4. Clean Air Action Plan Components

4.1 State Implementation Plans and Enforceable Control Measures

The purpose of the CAAP is to serve as San Juan County's official air quality improvement plan, with quantified emission-reduction measures. The CAAP needs to include necessary elements of a comprehensive air quality plan, but must be tailored to meet local needs and driven by local decisions.

One of the milestones of the EAC is the formal incorporation of the CAAP into the SIP for New Mexico. Included with the incorporation of the CAAP is the adoption of enforceable control measures for reducing ozone forming pollutants within the EAC area as a means of maintaining the 8-hour NAAQS for ozone. Due to the low ozone designed values that have been modeled for the EAC area, the NMED does not feel that these results indicate that mandatory control measures are needed to avoid San Juan County from being designated nonattainment, nor are any measures mandatory at present in order to model 2007 8-hour ozone concentrations in San Juan County that are within the 8-hour ozone NAAQS. However, the San Juan County EAC signatories are committed to ensuring that their area remains in attainment of the 8-hour ozone NAAQS.

The EAC signatories, in partnership with the Four Corners Ozone Task Force and other interested parties, have compiled the components of the San Juan County Clean Air Action Plan described in the following section as a best attempt to keep maintain attainment of 8-hour ozone NAAQS. Although the measures to be taken are neither mandatory nor enforceable, they represent San Juan County's best effort at continuing to take early action to maintain good air quality. Additional strategies will be developed and implemented to meet the requirements of the EAC if the voluntary strategies outlined in the CAAP fail.

4.2 Public Outreach Campaign

4.2.1 Web Site

NMED will develop a web site dedicated to the dissemination of ozone-related outreach material related to the San Juan County EAC region. Included in the web site will be:

- Health related information developed by the EPA;
- Basic ozone information;
- Ozone monitoring for the two ozone monitoring sites located in San Juan County;
- Public outreach materials of children;
- Related ozone studies and presentation for the EAC region; and
- Upcoming meetings, press releases, and public service announcements.

4.2.2 Public Service Announcements

The NMED is collaborating with the local governments within San Juan County will develop a series of public service announcements (PSA). These PSAs will advise local citizens in San Juan County to the hazards associated with ozone pollution and how to reduce ozone forming contaminants in their daily lives. The PSAs will be aired on two local radio stations in San Juan County during the months of May through August.

4.2.3 Educational Outreach Materials For Children

The NMED has created an ozone education workbook for children between the ages of 10 and 12 years. The workbook takes the children through the adventures of Tripper the cat and Bear the Hamster as they learn about ozone pollution in San Juan County. Included in the workbook is information on what ozone pollution is, how ozone pollution is created, how ozone pollution differs from stratospheric ozone, ozone in San Juan County, and how to reduce ozone pollution at the local level. The workbook also includes a color poster that lists ozone pollution reduction suggestions.

4.3 Voluntary Program for Emissions Controls

The emission control program would be a flexible, voluntary initiative administered by the NMED. The purpose of the program would be to identify and promote the implementation of cost-effective technologies and practices to reduce ozone-forming emissions from oil and gas production. Companies that choose to participate in the program would be recognized by the NMED as Clean Air Partners for San Juan County. The program would be modeled after the EPA Natural Gas Star Program.